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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,036	08/01/2006	Fumio Kato	043888-0495	3603
53080 7590 06/09/2009 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, NW WASHINGTON, DC 20005-3096				
EXAMINER				
LEE, CYNTHIA K				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
06/09/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/588,036

## Applicant(s)

KATO ET AL.

## Examiner

CYNTHIA LEE

## Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Priority***

Acknowledgement has been made of applicant's claim for priority under 35 USC 119 (a-d). The certified copy has been filed on 8/1/2006.

***Information Disclosure Statement***

The Information Disclosure Statement (IDS) filed 8/1/2006 and 5/30/2008 has been placed in the application file and the information referred to therein has been considered.

***Drawings***

The drawings received 8/1/2006 are acceptable for examination purposes.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 2005/0008936) in view of Yano (US 6235428).

Takahashi discloses an alkaline battery comprising a positive electrode, a negative electrode and an alkaline electrolyte, said positive electrode including a positive electrode material mixture containing manganese dioxide and nickel oxyhydroxide [0072].

Regarding the limitation "electrolytic" manganese dioxide, it has been considered but was not given patentable weight because the courts have held that the method of forming the product is not germane to the issue of patentability of the product itself.

Takahashi discloses that at least one of Zn, Co, and Mg can be dissolved in the nickel oxyhydroxide [0191]. Takahashi discloses a tap density of 2.0 to 2.5 g/cm<sup>3</sup> after 200 taps [0057]. Regarding the number of taps, it is a method determining the number of taps. The Examiner notes that 200 taps of Takahashi and 500 of Applicant's taps would results in similar tap density.

Takahashi discloses an average particle size of 5 to 50  $\mu$ m [0069]. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2144.05.

Takahashi does not disclose the average nickel valence. Yano teaches a nickel oxyhydroxide serving as the positive electrode active material preferably has a valence of nickel of 3.0 through 3.8 when fully charged. When the nickel oxyhydroxide has a valence of nickel smaller than 3.0, a sufficient discharge capacity is difficult to attain (4:35-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a nickel oxyhydroxide wherein the nickel has a valence of 3.0 or greater, as taught by Yano, for the benefit of obtaining sufficient discharge capacity. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d

257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2144.05.

Regarding claim 3, the amount of nickel oxyhydroxide is 30 wt%, thus the amount of manganese dioxide is 70 wt% [0074].

Regarding claim 4, said positive electrode material mixture further comprises graphite powder. See Abstract. The ratio of the active material and graphite is 10:1 [0046]. The ratio would be the same for the active material of manganese dioxide and nickel oxyhydroxide [0074]. Thus, the amount of said graphite conductive material is  $1/(10+1)$ , or 9% relative to the total amount of said manganese dioxide, said nickel oxyhydroxide and said graphite conductive material contained in said positive electrode material mixture.

Regarding claim 5, Takahashi does not disclose the electrode material mixture further comprising a rare-earth oxide. Yano teaches of adding a rare-earth compound, such as a  $Y_2O_3$ , to the nickel oxyhydroxide active material (12:37, 65). The amount added is  $1/(100+10+1)$ , or 0.9%. Yano discloses that adding a rare-earth compound prevents battery leakage compared to battery C3 that does not contain a rare-earth compound (12:45, Table 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a rare-earth compound, such as  $Y_2O_3$ , for the benefit of preventing battery leakage.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 2005/0008936) in view of Yano (US 6235428) as applied to claim 1, further in view of Tanigawa (US 2002/0024041).

Takahashi modified by Yano teaches all the elements of claim 1. Takahashi discloses that at least one of Zn, Co, and Mg can be dissolved in the nickel oxyhydroxide [0191], but does not disclose the amount of Mg. Tanigawa teaches of dissolving 3 wt% Mg in 100 parts by wt nickel oxyhydroxide [0085]. Elements are added to a positive active material to improve the capacity (See Table 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add various amounts of dissolved elements for the benefit of increasing the capacity of the battery.

Claims 6, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 2005/0008936) in view of Yano (US 6235428).

Takahashi discloses an alkaline battery comprising a positive electrode, a negative electrode and an alkaline electrolyte, said positive electrode including a positive electrode material mixture containing manganese dioxide and nickel oxyhydroxide [0072].

Regarding the limitation "electrolytic" manganese dioxide, it has been considered but was not given patentable weight because the courts have held that the method of forming the product is not germane to the issue of patentability of the product itself.

Takahashi discloses that at least one of Zn, Co, and Mg can be dissolved in the nickel oxyhydroxide [0191]. Takahashi discloses a tap density of 2.0 to 2.5 g/cm<sup>3</sup> after 200 taps [0057]. Regarding the number of taps, it is a method determining the number of taps. The Examiner notes that 200 taps of Takahashi and 500 of Applicant's taps would result in similar tap density.

Takahashi discloses an average particle size of 5 to 50  $\mu$ m [0069]. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2144.05.

Takahashi does not disclose the average nickel valence. Yano teaches a nickel oxyhydroxide serving as the positive electrode active material preferably has a valence of nickel of 3.0 through 3.8 when fully charged. When the nickel oxyhydroxide has a valence of nickel smaller than 3.0, a sufficient discharge capacity is difficult to attain (4:35-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a nickel oxyhydroxide wherein the nickel has a valence of 3.0 or greater, as taught by Yano, for the benefit of obtaining sufficient discharge capacity. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2144.05.

Regarding claim 8, Takahashi discloses that the amount of nickel oxyhydroxide is 30 wt%, thus the amount of manganese dioxide is 70 wt% [0074].

Regarding claim 9, Takahashi discloses that said positive electrode material mixture further comprises graphite powder. See Abstract. The ratio of the active material and graphite is 10:1 [0046]. The ratio would be the same for the active material of manganese dioxide and nickel oxyhydroxide [0074]. Thus, the amount of said graphite conductive material is  $1/(10+1)$ , or 9% relative to the total amount of said manganese dioxide, said nickel oxyhydroxide and said graphite conductive material contained in said positive electrode material mixture.

Regarding claim 10, Takahashi does not disclose the electrode material mixture further comprising a rare-earth oxide. Yano teaches of adding a rare-earth compound, such as a  $Y_2O_3$ , to the nickel oxyhydroxide active material (12:37, 65). The amount added is  $1/(100+10+1)$ , or 0.9%. Yano discloses that adding a rare-earth compound prevents battery leakage compared to battery C3 that does not contain a rare-earth compound (12:45, Table 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a rare-earth compound, such as  $Y_2O_3$ , for the benefit of preventing battery leakage.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US 2005/0008936) in view of Yano (US 6235428) as applied to claim 6, further in view of Tanigawa (US 2002/0024041).



Takahashi modified by Yano teaches all the elements of claim 6. Takahashi discloses that at least one of Zn, Co, and Mg can be dissolved in the nickel oxyhydroxide [0191], but does not disclose the amount of the dissolved element. Tanigawa teaches of dissolving 3 wt% Mg in 100 parts by wt nickel oxyhydroxide [0085]. Elements are added to a positive active material to improve the capacity (See Table 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add various amounts of dissolved elements for the benefit of increasing the capacity of the battery.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Lee/  
Examiner, Art Unit 1795

/PATRICK RYAN/  
Supervisory Patent Examiner, Art  
Unit 1795